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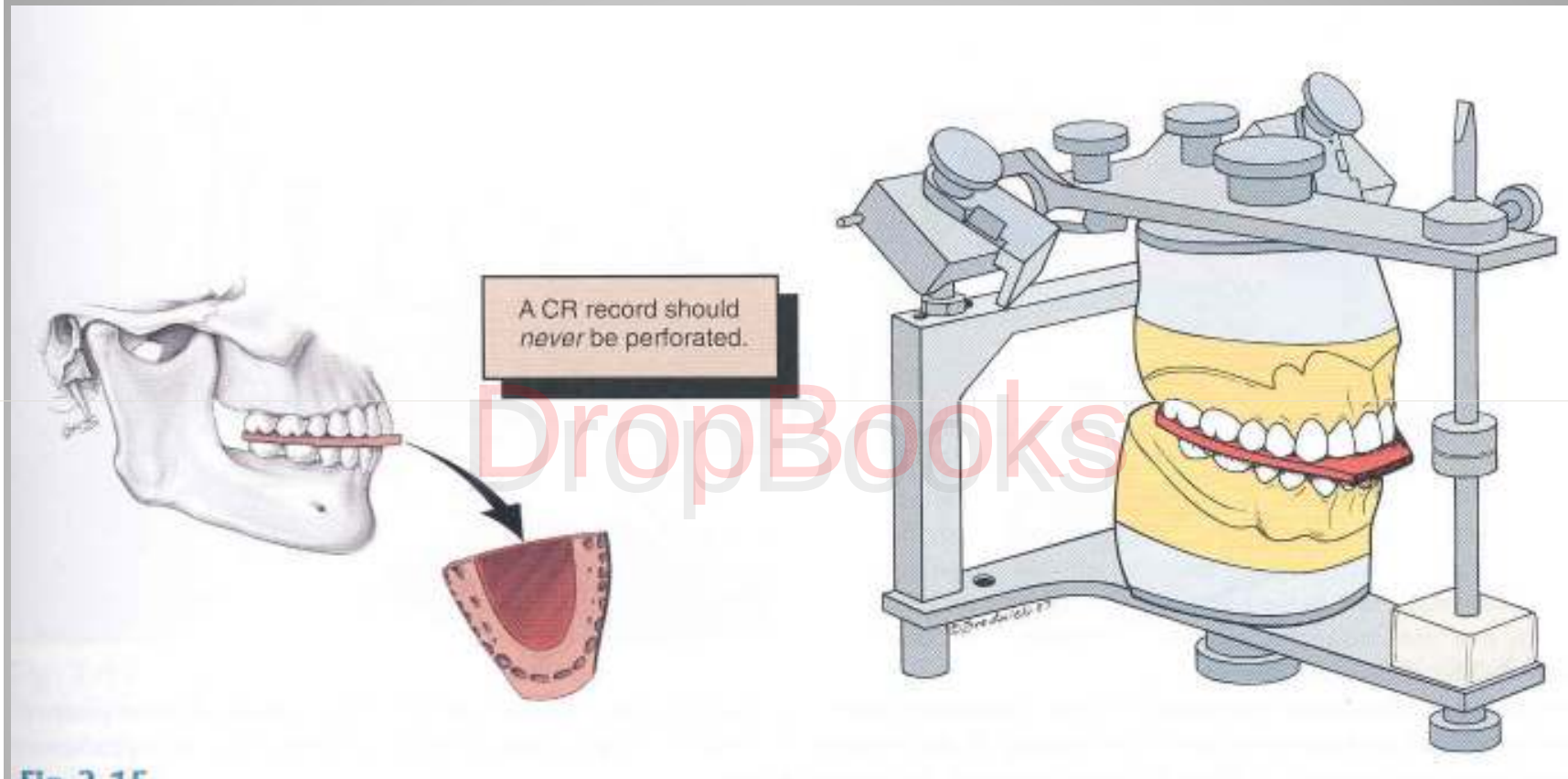
Interocclusal record

“Bite Registration”

The inter interocclusal record is a very important diagnostic and treatment procedure for fabricating restorations that occlude and function properly through relating working and opposing cast on articulator in a manner simulating that of the maxilla and mandible existing intraorally

Definition:

It is a record to transfer the interocclusal relationship from the patient mouth (after teeth preparations for fixed replacement) to the laboratory for orientation of the working casts, dies or soldering investment casts to the adjacent and opposing dental structures on suitable articulators



Materials used for bite registration

- 1- Zinc oxide and eugenol impression past
- 2- Waxes
- 3 -Putty like elastomers
- 4 -Autopolymerizing resins
- 5- Combination of the mentioned materials.

Requirments of the material used for bite registration

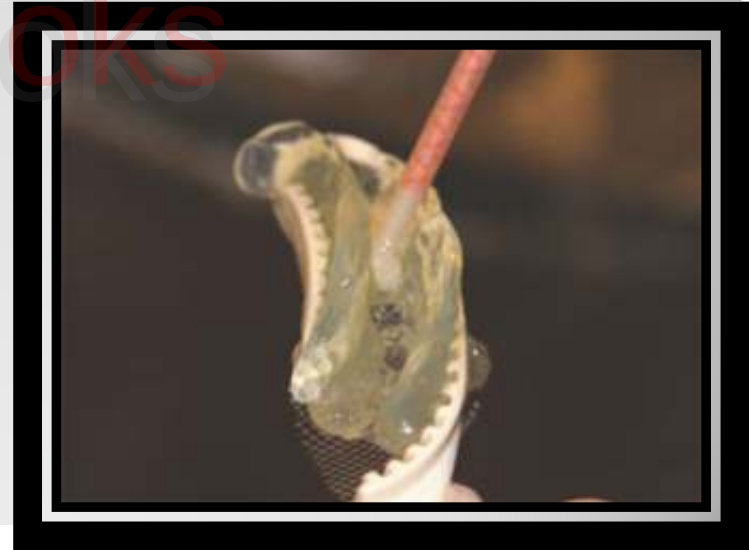
1. Should record occlusal, incisal and axial walls accuracy
2. Should not displace the teeth during intercuspatation
3. Have no or minimal dimensional change upon setting
4. Should remain rigid after setting
5. Have no or minimal resistance texture during closure to avoid abnormal movements of the teeth
6. Can allow checking of inter-occlusa record several times in the patient mouth

- **1- Zinc-oxide and eugenol bite registration Wash**

It is considered to be the most acceptable method for recording the centric occlusion relationship using registration paste carried by the special delivery wire frame with a fiberglass mesh called John's frame



- There are another deliveries can be used in the same idea for half or whole the dental arch i.e. for unilateral or bilateral registration



- The wire arms of the frame should extend beyond the occlusal surface of posterior teeth and incisal edge of the anterior, i.e. to be hidden inside the labial and buccal sulci. The posterior part of the frame should be terminated at the most posterior teeth .

- A mesh of fiberglass is to be cut and contoured to cover the frame. Attach the mesh with a sticky periphery wax to the frame.



- This delivery system should be trimmed and contoured in patient mouth before application of the paste.

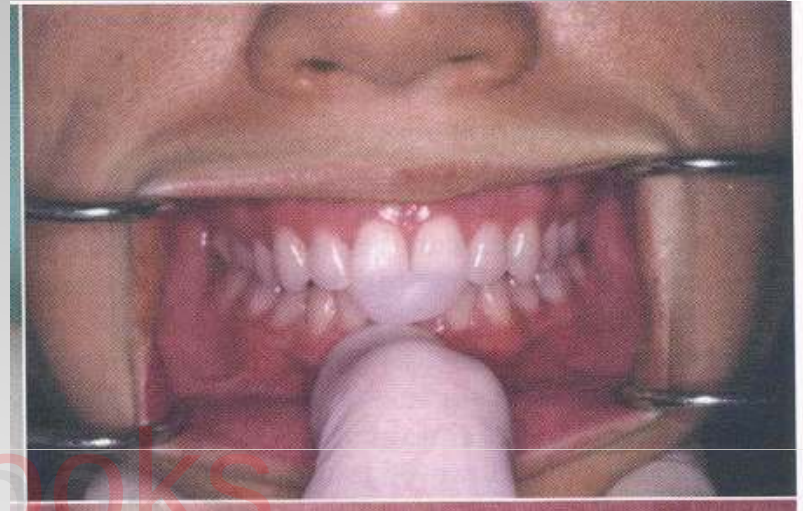
Equal amount of zinc oxide and eugenol past are mixed according to manufacture's instructions and spread on the top (maxillary) surface of the delivery system for about 2 mm depth.



On the undersurface (mandibular) another layer is smeared in a horseshoe pattern to avoid tongue inclusion.

**Determine a
centric occlusion
key point**

instruct the
patient to open
and close his
mouth several
times to be
trained for proper
centric occlusion



- Seat the frame with paste in the patient mouth, being sure that the wire frame is not interfering with the occlusion

- Ask the patient to close in centric position and observe the correct position of the centric occlusion key point.

- Instruct the patient to keep closing till the past firmly sets.
- Remove the frame with registration record from patient mouth, rinse and disinfect. Cut the interdental excess materials using sharp blade and trim paste from areas exposed to prevent patient model from seating properly

Use of record

1. As bite registration record and for preparation of occlusion cast for the opposing arch in the same time
2. As bite record only, i.e. to orient both upper and lower models

Advantages:

1. Accurate record for occlusal surface and incisal edges due to viscous property and low resistance texture of the paste
2. Dimensional stability after removal from patient mouth when stored according to storage instructions
3. Rigidity and resistance to compression permitting easy and controlled removal after setting, helps in stable fixation of the dies and accurate seating of models
4. Could be used for production of opposing model, so the opposing arch impression is not necessary, because stone can be poured directly into the bite frame carrying the past record
5. It can be easily reassembled if the interocclusal record is broken or damaged

Disadvantages

Zinc oxide eugenol past is non -elastic after setting and distorts when removed from undercut areas. Thus teeth contour, axial walls embrasures are not accurately reproduced with this record

II –Waxes

Used for bite registration with the advantage of simplicity and economical procedure

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Disadvantages

1. They do not produce accurate anatomical forms
2. They tend to spread out laterally during closure without recording the inciso-gingival outline forms
3. They have considerable dimensional changes even with mild fluctuation in room temperature
4. Special texture of wax may guide the patient to close in abnormal position during bite registration.

Techniques

- II.1 Wax squash bite:

Using 2 layers of molding base plate wax, Sandwiching a very thin sheath of metallic foil, gauze or fiberglass for strengthening of the wax.



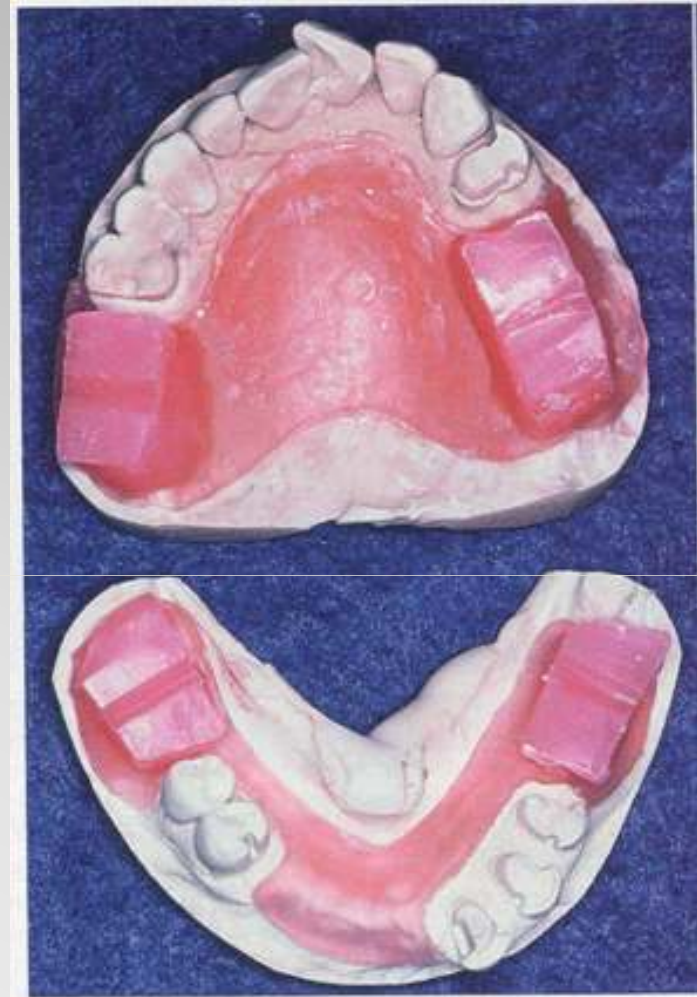
- It could be supplied as ready-made. This combination is softened and placed on the occlusal surface of mandibular teeth, and ask the patient to close in place over the wax to avoid distortion.



This technique could be used in unilateral cast restoration or when there are intermediate numbers of missing teeth

II.2. Wax bite block:

It consists of an occlusal wax rim fixed on base plate to replace the missing teeth resting on ridge area.



- It is indicated when restoring anterior teeth where the posterior teeth are missing. The upper and lower bite blocks are placed in patient mouth after softening and ask the patient to close in centric position. Sealing of the wax block is done by a hot knife.

III . Putty like elastomers

- Poly-vinyl siloxane and polyether; these materials are more accurate than other materials in recording the fine details of tooth surface. They have very little dimensional changes upon setting, but they remain non-rigid which could later the way to seal the models







IV . Autopolymerizing resins

- Autopolymerizing resin can also be used as an interocclusal registration material in certain situations. However, the acrylic resin has the following disadvantages as an interocclusal recording material:

- 1. Dimensional instability of some commercial formulations due to continued polymerization resulting in shrinkage
- 2- If hardens in patient's mouth in an undercut area, it will never be removed easily. It should be removed while still soft, and this may lead to distortion
- 3- The strength and rigidity of the material can damage plaster cast and die during articulator mounting

V- Combinations

- Bite registration materials could be used in combination to get full of the advantage of each material. When interocclusal space for clearance between teeth preparations is greater than 6 mm, combinations of wax and zinc oxide eugenol past could be used



VI- Full Arch casts

- When bite registration is not indicated as in case of single preparation, full arch models are indicated as an accurate bite registration technique.



- It is simple, accurate and time saving. Impressions of the arch with prepared teeth and opposing arch are taken and poured into stone and moulded on articulators without any bite registration record. Air bubbles should not be trapped in the impression during pouring to avoid occlusion obstruction with these bubbles on mounting



Thank you